

CCO kit

Installation – Commissioning – Maintenance

27-08-2025
Art. 942428099

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Symbol Key

Symbols on the Machine

This product complies with applicable
EU directives



Symbols in the Instruction Manual

Warning/Caution!



Area of Application

The product is a reversing valve with actuator. The product regulates heating and cooling water flow in products including climate beams, comfort modules and radiation panels.

The product may not be used for anything other than its intended use.



General

Read through the entire instructions for use before you install/use the product and save the instructions for future reference. It is not permissible to make changes or modify this product other than as specified in this document.

Table of Contents

- 1 CCO valve
- 1 actuator with cable
- 6 connectors
- 1 bracket
- 1 screw
- 1 Instruction Manual



Protective Equipment

Always use appropriate personal protective equipment for the work in question, in the form of gloves, respirators, protective glasses and helmets during handling, installation, cleaning and service/maintenance.



Electrical Safety

Permitted voltage, see Electrical data.

It is not permissible to insert foreign objects into the product's connections or ventilation openings; risk of short circuiting.

24 V isolation transformer to be connected should comply with the provisions of IEC 61558-1.

Cable dimensioning must be carried out for cabling between the product and the power supply source.

Disconnect the power supply when working on products that are not required to run.

Always follow the local/national rules regarding who is permitted to carry out this type of electrical installation.

Handling

Always use appropriate transport and lifting devices when the product is to be handled to reduce ergonomic loads.

The product must be handled with care.

Installation

- Moist, cold and aggressive environments must be avoided.
- Assemble the product according to these instructions and applicable industry regulations.
- Install the product for easy access during service/maintenance.
- Avoid installing the product near a heat source.
- Check to make sure that the product does not have any visible defects.
- Check that the product is properly secured after it has been installed.
- Secure cables with cable ties.
- Check that all cables are properly secured in place after installation.

Cleaning of Electrical Components

- If needed, use a dry cloth to clean the components.
- Never use water, detergent or cleaning solvent or a vacuum cleaner.

Service/Maintenance

- In connection with service, mandatory ventilation inspection or cleaning of the ventilation system, check that the general condition of the product looks good. Pay particular attention to the suspension and cables, and that they sit firmly in place.
- It is not permissible to open or repair electrical components.
- If you suspect that the product or a component is defective, please contact Swegon.
- A defective product or component must be replaced by an original spare part from Swegon.
- The CCO kit does not require maintenance.

Environment and Waste Disposal

Help to protect the environment by ensuring correct disposal of the packaging and use the products in accordance with applicable environmental regulations.

Product Warranty

The product warranty or service agreement will not be valid/extended if: (1) the product is repaired, modified or changed, unless such repair, modification or change has been approved by Swegon AB; or (2) the serial number on the product has been made illegible or is missing.

Included Parts

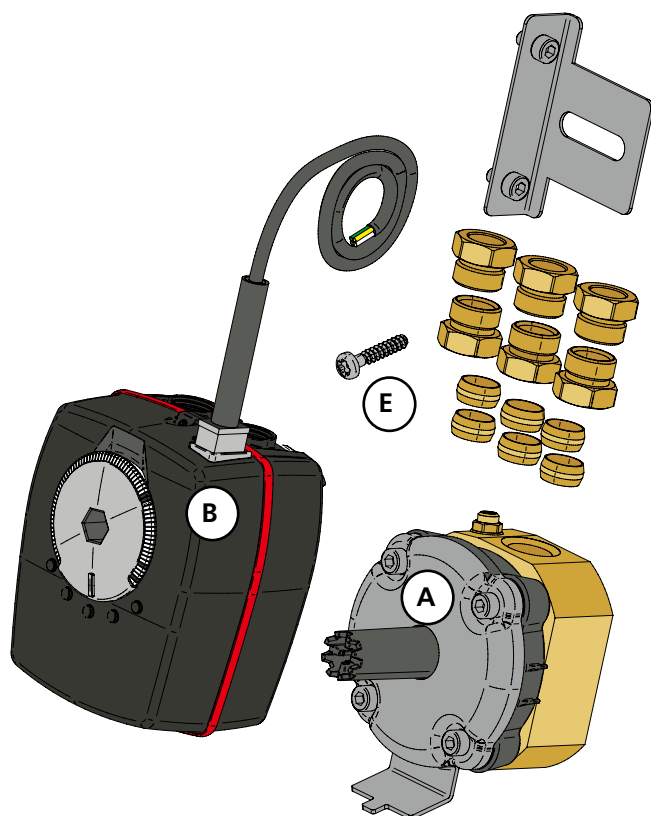


Figure 1. CCO kit: Included Parts

A: CCO valve

B: Actuator with cable

C: Connectors

D: Bracket

E: Screw

Assembly

Valve and actuator are assembled as shown below.

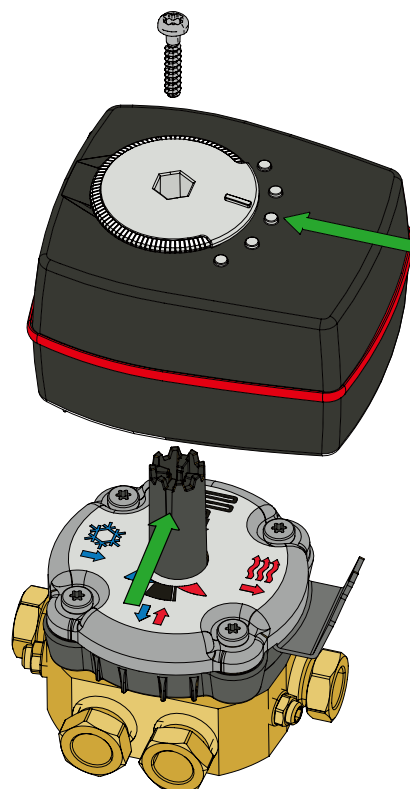


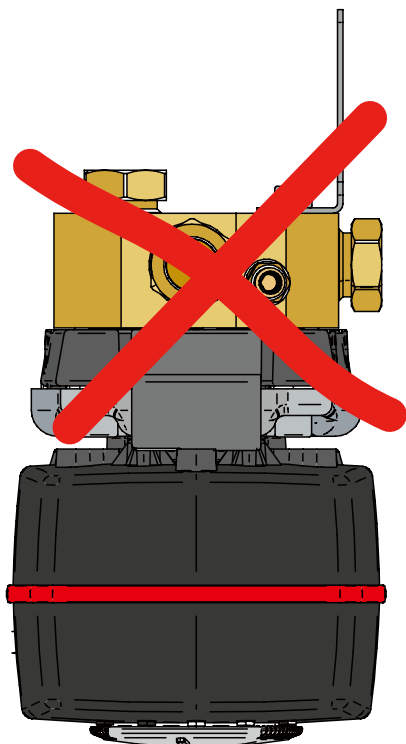
Figure 2. Mounting of Actuator on Valve

Mounting of Actuator on Valve

- First, make sure the shaft and actuator are in the correct position.
 - The slot on the valve shaft should be pointing in the direction shown in the figure above
 - The actuator should be in neutral mode.
- Mount the actuator on the valve shaft and make sure the actuator is correctly resting against the valve support.
- Finally attach the actuator into the valve shaft using the included screw (PH2).

The shaft on the valve can be rotated by hand or with a rod. To change the actuator's starting position, lift the upper grey part to neutral and then turn the grey knob until the actuator is pointing at centre position. Then press the grey part down again.

The product is fitted with six 3/8" clamp-ring connectors for Ø 12 mm copper pipes. These connectors must be installed according to industry regulations and with the correct torque to ensure tightness. Incorrectly installed connectors may result in leakages and extensive water damage. Installation should be performed by a qualified professional.



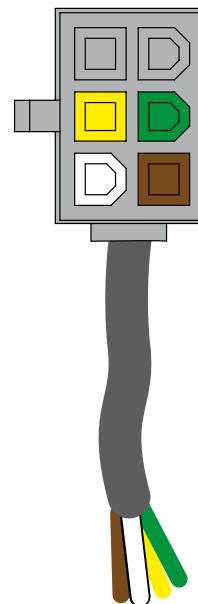
Incorrect mounting position!

Connection

Cable ends are connected as shown in the table below.

Only DC current may be used.

Yellow	Green	White	Brown
0-10 V	GND	I/GND	PWR



Water Quality

Swegon recommends water quality according to VDI 2035-2 for both the heating and cooling systems. In order to maintain the oxygen content in the water below the levels (<0.1 mg/l) prescribed in VDI 2035-2, it is recommended to install a vacuum degasser, particularly in the cooling system where it is more difficult to get rid of dissolved gas. It is also important for the pre-pressure in the expansion vessel to be dimensioned according to EN-12828 for both the heating and cooling systems and for regular checks to be made of the pre-pressure. The cooling and heating systems must be designed to prevent oxygen from entering the system, this is particularly important to consider when selecting flex hose, pipes and expansion vessels.

When the system is filled with fresh water, it has an oxygen content of approximately 8 mg/l, however, this oxygen is consumed quickly through corrosion processes and within a few days the oxygen in the water should be consumed. Nevertheless, it is important to avoid filling the system with fresh water unnecessarily.

Automatic air vents are usually installed to facilitate the filling of the system, it is, however, recommended that automatic air vents are switched off when the system is fully vented to avoid these sucking air into the system if the pre-pressure in the expansion vessel drops.

Pressure difference

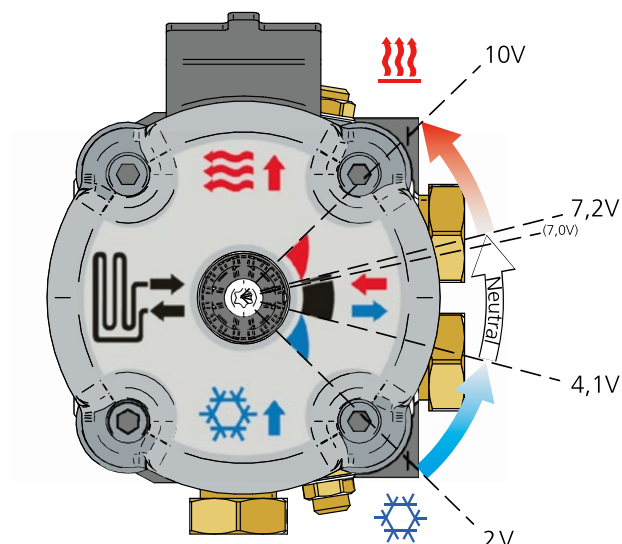
For correct and safe operation of the 6-way valve, it is important that the pressure difference between the heating and cooling circuits does not exceed 1 bar. If the pressure difference becomes greater, there is a risk of internal leakage within the valve, which may cause mixing of water between the hot and cold sides.

Commissioning

Valve

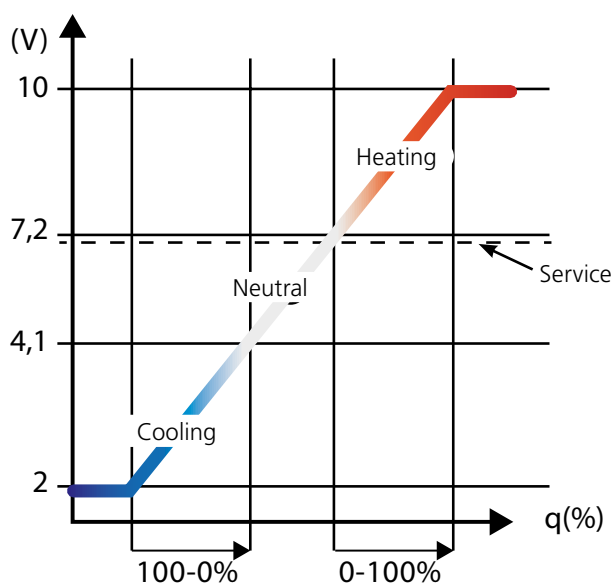
The valve can be regulated using a 2-10 V actuator which turns the valve.

- At 2 V the valve is in one of its end positions and fully open for cooling.
- When the cooling requirement is less, the voltage signal is increased to close the valve completely at 4.1 V.
- In the range between 4.1 and 7.2 V, the valve is in neutral mode (also see neutral mode below)
- At 7.0 V, the valve is closed in service mode.
- At 7.2 V, it begins to open for heating, and at 10 V is fully open for the flow of hot water.



Neutral Mode

The valve is equipped with a pressure equalisation channel. This prevents pressure differences occurring between the product and system.

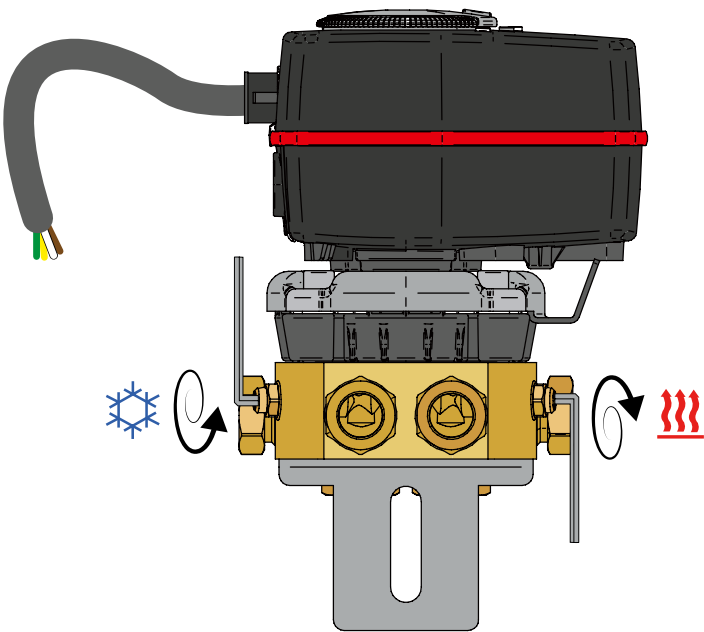
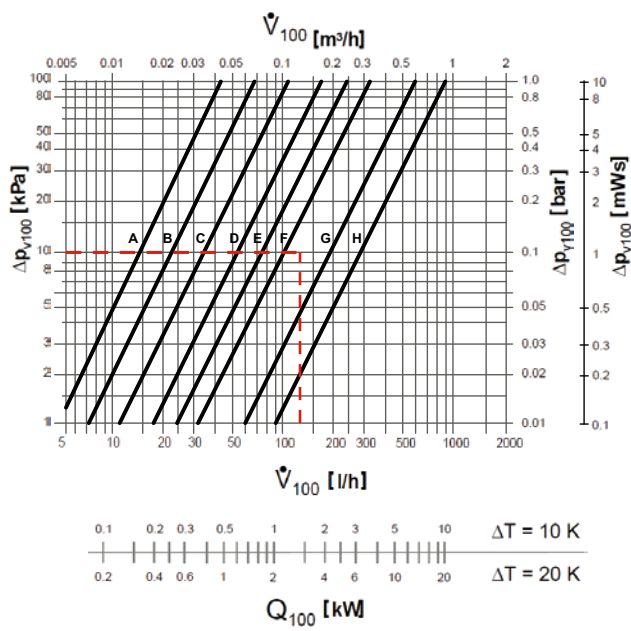


		Supply cooling
		Return cooling
		Supply heating
		Return heating
		Return coil
		Supply coil
		From max. to min. heating
		Black field = neutral
		Narrow left position = closed for servicing
		From min. to max. cooling

2-10 V modulating:

- 2-4.1 Cooling
- 4.1-7.2 Neutral mode
- 7.0 Service mode
- 7.2-10 Heating

Setting of Kv-value



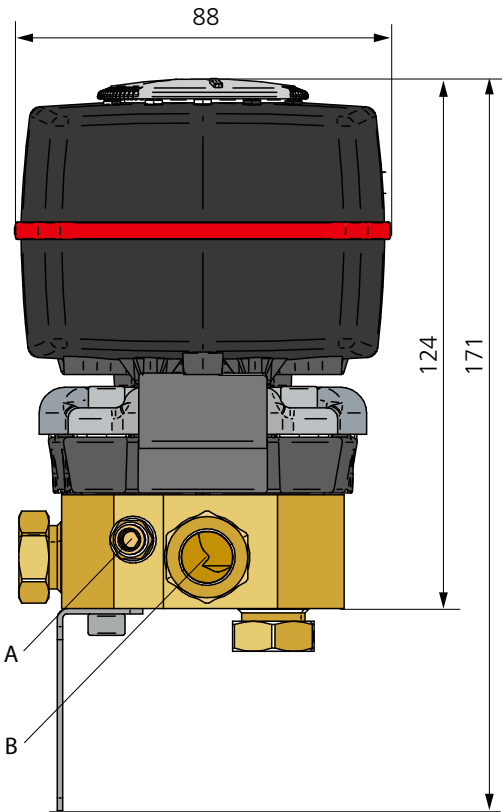
Kv-value

Number of turns that the adjustment screw is open								
	A	B	C	D	E	F	G	H
Turns	0.5	0.75	1	1.25	1.5	2	3	4
Kvs m³/h	0.042	0.072	0.116	0.171	0.24	0.327	0.6	0.9
Kvs l/s	0.012	0.020	0.032	0.048	0.067	0.091	0.17	0.25

Example:

In a typical case, a flow of 144 l/h is required to obtain correct capacity in the cooling situation, and a pressure drop of 10 kPa across the valve is desirable to obtain good regulation.
In the diagram (see red marking) you can see that this is achieved at the preset kv value between F and G, i.e. the screw should be opened approx. 2.5 turns, see Table above.

Dimensions



A:	Allen key 4 mm
B:	Nut 9 mm

